

experimenting as to the influence of current strength, temperature and concentration of solution, on the transference of ions, M. Kirmis met with a peculiar regular arrangement of silver crystals in the platina dish of a silver voltameter. The result is best obtained with a considerable electromotive force. The intensity should not exceed a certain limit (not more than 0.28 mgr. of silver being separated out per square cm. and minute). The concentration of the solution should be between 5 and 10 per cent., and a positive electrode with sharp points should be used. The deposited strips appear as accumulations of moss-like dendrites, which, under the microscope, are found to be made up of cubes and octahedra.—In works which describe the process that occurs in sounding an open or closed pipe, it is usually represented that the air current from the slit at the bottom, breaking against the upper lip, imparts shocks to the air column of the pipe, and these are the cause of the air-column being thrown into vibrations. M. Sonreck, an organ-maker of Cologne, here questions this hypothesis, and supposes instead a pendulum-like to and fro motion of the blast-current, which has the widest amplitude at the edge of the upper lip, is dependent on the elasticity of the air-column of the pipe and the pressure of the outer air, and so is subject to the laws of vibration of the air-column. He explains the process in some detail, and some interesting forms of experiment are described. For complete determination of any colour it is necessary to know three things, viz., the colour-tone, purity, and brightness. The first is found by ascertaining that spectral colour by whose mixture with white the colour in question is had. M. von Bezold describes two methods of doing so simply and without trouble. They are closely related to a plan suggested by Vierordt for producing mixtures of pigment and spectral colours.—M. Gieseler describes a simple apparatus for measuring small intervals of time by a determination of the time of fall of a freely-falling body.—We further note papers on the specific heat of cerium, lanthanum, and didymium, by M. Hillebrand; and on experiments on the electro-motive forces induced in unclosed circuits through motion, by M. Helmholtz.

THE current number of the *Ibis* commences with a paper by Prof. Newton and Mr. Edward Newton on the Psittaci of the Mascarene Islands, in which the Seychellian *Palaeornis wardi* is figured, and the species peculiar to each of the islands are described, four of the eight being extinct, one barely surviving, and the remainder diminishing in number.—Mr. H. Seebohm and Mr. J. A. Harvie Brown continue their notes on the birds of the Lower Petchora, figuring the eggs of *Tringa minuta* from Dvoinik.—Mr. D. G. Elliot in his notes on the Trochilidae discusses the genera *Cyanomyia* and *Heliotrypha*, describing seven species of the former, one, *C. microrhyncha*, being new, and three of the latter, *H. squamigularis*, of Gould, being shown to be *H. barrali*, of Mulsant and Verreaux.—Mr. H. E. Dresser continues his notes on Severtzoff's "Fauna of Turkestan," specially referring to *Ciconia mycteria* *hyncha*, a species with the bill shaped like that of *C. boyciana*, but red.—Mr. R. Swinhoe describes a collection of birds from Hakodadi, in Northern Japan, sent by Mr. T. W. Blakiston. Two new species are described and figured, *Arundinax blakistoni* and *Schenckius pyrrhulinus*.—Lord Walden makes notes on the late Colonel Tickell's manuscript work entitled "Illustrations of Indian Ornithology." The work was presented by the author in 1874 to the Zoological Society. It is beautifully illustrated and fully annotated, forming seven small folio volumes. Figures are given of *Picus atratus*, *Zosterops siamensis*, and *Dicaeum trigonostigma*, together with a brief account of the contents of each volume.—Mr. P. L. Sclater records further ornithological news from New Guinea, describing results arrived at by Beccari, Bruijn, and D'Albertis. The collections of the two first-named contain 4,600 specimens, referable to 350 species, of which 58 are said to be new to science.—Mr. J. H. Gurney continues his criticism of Mr. Sharpe's "Catalogue of the Accipitres in the British Museum."—Lord Walden describes and figures a new species of *Trichostoma* from Celebes, *T. finschi*, and finally Mr. Salvin describes a new *Odontophorus*, *O. cinctus*.

Geological Magazine, Nos. 141, 142, 143, 144, 145.—The articles that are running through several numbers are:—Sketch of the geology of Ice and Bell Sounds, Spitzbergen, by Prof. A. E. Nordenskjöld, with woodcuts.—The probable conditions of deposit of the Palæozoic rocks in the northern hemisphere, by Henry Hicks, with a folding plate comparing Europe with North America.—Cretaceous Gasteropoda, by J. Starkie Gardner.—There are several papers on glaciers and ice-action: among

them are Mechanics of Glaciers, David Burns.—Ice-work in Newfoundland, John Milne (of the Mining School, Japan).—Glacial events in England and Wales, D. Mackintosh.—The erosion of lake-basins by glaciers, Osmond Fisher.—Notes on glaciers, T. G. Bonney.—Sub-aërial denudation *versus* glacial erosion, W. Gunn.—There are also many letters on the subject of the origin of lake-basins from Prof. Ramsay, James Geikie, Prof. Hull, Prof. Green, J. W. Judd, T. V. Holmes, Hugh Miller.—The other papers are: On the Carrara marbles, by G. A. Lebour, showing why they are now regarded as of Carboniferous age instead of Jurassic, as recently they have been.—The transport of volcanic dust, by Prof. Nordenskjöld. This is a record of the passage of volcanic dust from Iceland to the east coast of Sweden, a greater distance than has ever been known before.—A paper on the vertical range of graptolites in Sweden, by G. Linnarsson, is accompanied by one on the correlation of the graptolitic deposits of Sweden with those of Britain, by Prof. H. A. Nicholson.—On the exhumation and development of *Omosaurus armatus*, Owen, by W. Davies, of the British Museum. This is a popular description of how the remains were removed from the Kimmeridge clay of Swindon to the British Museum.—On the volcanic outbursts which preceded the formation of the Alpine system, by J. W. Judd.—In connection with Mr. Hick's papers on Palæozoic rocks is one by Prof. Linnarsson, criticising some of his conclusions.—There are also some minor papers and a number of miscellaneous articles.

SOCIETIES AND ACADEMIES

VIENNA

Imperial Academy of Sciences, Feb. 3.—Contributions to a knowledge of interstitial inflammation of the liver, by M. Müller.—On the ending of nerves in the epidermis of mammals, by M. Mojsisovics. He examined (after Eimer) the snout of the mole, and of some foreign related species; and he comes to a different conclusion regarding the "Eimer organs." M. Riegler exhibited an osteophyte, weighing 1,120 gr., that had been found in the skull of an ox. The animal had seemed quite fresh and healthy.

Feb. 10.—On the colours of thin crystal plates, by M. Ditscheiner. These arise through interference of the internally reflected light rays, and are seen in crystal plates (gypsum) of much greater thickness than that which simply refracting plates must have in order to show the ordinary colours of thin plates.—On the changes in arterial blood pressure after closure of all the arteries of the brain, by M. Mayer. There is at first great increase of arterial blood pressure, which is not due either to the mechanical closure, nor to increased activity of the heart, but to intensive stimulation of the cerebral vasomotor centre, through deficient access of arterial blood. In five or ten minutes this excited state of the brain centre passes into that of complete paralysis, indicated by low blood pressure. The author draws some inferences for the doctrine of the vasomotor centres in the brain and spinal cord.

GENEVA

Physical and Natural History Society, March 16.—Prof. Plantamour, fifteen years ago, gave a *résumé* of the results of the meteorological observations made at Geneva since 1826. Disposing, to-day, of fifty years' observations, he examined the modifications made on his conclusions by that new period of fifteen years, and other results which may be deduced. The mean of temperature has been in general greater during the last fifteen years, and enables us to increase by $\frac{1}{10}$ of a degree the annual mean previously deduced. All the monthly means must be slightly augmented, if they are to be derived from fifty years of observation instead of thirty-five; except in the case of the month of December. The following is the table of means (in centigrade degrees) according to the two series:—

	Jan.	Feb.	Mar.	April	May	June	July	Aug.
1826-1860 ...	- 0.34	+ 1.32	4.48	8.61	12.88	16.78	18.53	17.80
1826-1875 ...	- 0.08	+ 1.60	4.60	8.97	13.20	16.81	18.81	17.91
Difference ...	+ 0.26	+ 0.28	+ 0.12	+ 0.36	+ 0.32	+ 0.03	+ 0.28	+ 0.11
	Sept.	Oct.	Nov.	Dec.				
1826-1860 ...	14.29	9.81	4.45	+ 0.86				
1826-1875 ...	14.66	9.88	4.55	+ 0.80				
Difference ...	+ 0.37	+ 0.07	+ 0.10	+ 0.06				

The same result appears if we divide the year into seventy-three periods of five days, or pentades, according to the

system of Dove. The comparison of the temperatures of the seventy-three pentades, observed and calculated by the formula, may serve for studying the question raised by M. Ch. St. Claire-Deville, viz., whether there exist certain days or certain epochs of the year when the temperature is lower or higher than is consistent with the regular progress, ascending or descending, of the said temperature. The greater the number of years on which this comparison is based, the more the difference between observation and calculation diminishes, not only absolutely, but in comparison with the mean error. This is contrary to the theory of M. St. Claire Deville, for if there existed a cause of errors at certain determined epochs, they ought to become more pronounced the greater the number of years. By calculating for each pentade the probable error, we may deduce from it the periodical formula representing the variability of the temperature at the various epochs, a variability which differs much in the various months. Thus it is about $\pm 2^{\circ} \cdot 53$ at the beginning of January, it diminishes to $\pm 1^{\circ} \cdot 77$ towards the end of March, rising to $\pm 1^{\circ} \cdot 84$ at the beginning of May; it falls again to $\pm 1^{\circ} \cdot 38$ at the beginning of October, and increases rapidly afterwards to the end of the year. The first days of May, dreaded for a return of cold, correspond closely to a period of very great variability; but these returns of cold do not take place at a fixed period; they may occur from the end of April to the end of June. In relation to the succession of warm years and cold years, there will be recognised incontestably in the fifty years of observations at Geneva, series in which the one or the other predominate in a striking manner. Thus between 1829 and 1834 we find seven warm and two cold years; between 1835 and 1860, twenty-two cold, and four warm years; during the fifteen last years, thirteen warm and two cold. But there is no trace of periodicity in this return of warm or cold years. By establishing four categories for the years, M. Plantamour has found that there has been during the period of half a century, fourteen very cold years, twelve cold, ten warm, and fourteen very warm. The denominations "very cold" and "very warm" are applied to negative and positive divergences surpassing the limit of probable divergence. These figures are very near to the probable figure $12 \cdot 5$ for each category. In the case of a periodic return of warm and cold series, every eleven years taken, for instance, as in the case of the solar spots, as some meteorologists have presumed, the succession of warm and very warm, cold and very cold years, ought to be the most common; on the other hand the succession of years very different in temperature ought to be very rare. But nothing of this kind has been observed; on the contrary, a very cold year may follow a very cold year, or *vice versa*. It is then impossible to deduce any periodicity in the succession of cold and hot years.

PARIS

Academy of Sciences, Aug. 14.—Vice-Admiral Paris in the chair.—The following papers were read:—Experimental critique on glycæmia (continued). Glycæmia has its source in the glycogenic function of the liver; by M. Cl. Bernard. 1. The blood of the sub-hepatic veins is more saccharine than the arterial blood and the blood of the *vena porta*. 2. The blood of the inferior *vena cava* is suddenly enriched in sugar (before entering the heart), at the part where the sub-hepatic veins join it.—On the thermal formation of two isomeric propylic aldehydes, by M. Berthelot. The transformation of a primary and normal aldehyde into a secondary isomeric aldehyde liberates very little or no heat. Isomeric bodies of the same chemical function are formed with almost the same liberations of heat, and this similarity subsists in the formation of their isomeric derivatives.—Thermal researches on hydrosulphurous acid, by M. Berthelot. Systems are so much the more stable, other things equal, as they have lost a greater proportion of their energy.—On the dynamical theory of regulators, by M. Rolland.—On a hydrated aluminous silicate deposited by the hot spring of Saint-Honoré (Nièvre) since the Roman epoch, by M. Daubrée. This deposit is characterised by the great predominance of silica over alumina and the small quantity of water.—On trepanation of the bones in various forms of osteo-myelitis, by M. Ollier.—Results obtained in treatment of phylloxerised vines with sulpho-carbonates, by M. Marès. He applies to the attacked parts sulpho-carbonate of potassium (1 decilitre per stock) dissolved in water or absorbed in powdered soda-residuum, then hardens the ground by rolling or beating. This proves successful. It should be done before the stock has become stunted; otherwise two or three seasons' treatment may be necessary to recover it, or it may not recover.—Observations on

the development and the migrations of Phylloxera, by M. Boiteau.—Employment of a distributing pale to convey sulpho-carbonates to the roots of phylloxerised vines, by M. Gueyraud. The sulpho-carbonates diluted with three or four times their volume of water and distributed at a depth of 25 cm. to 50 cm. destroyed in three days the Phylloxera on the roots, and restored vigour and verdure to the vines.—Treatment of phylloxerised vines at Aimagues (Gard). Employment of a subterranean projector for distribution of the insecticide liquid, by M. Roussellier. With this projector he applies sulphide of carbon, in very small doses, repeated all the summer, to the roots.—On the destruction of Phylloxera by means of decortication of the vine-stocks, by M. Sabaté. In thirty hectares of vines decorticated last winter, not only the old centres of infection had not extended, nor had new ones been formed, but many vines, thought to be gone, had recovered their vigour. In forty non-decorticated hectares, the reverse was the case. The process is accomplished easily with steel gloves.—Discovery of a planet (165), by Mr. Joseph Henry, at Washington, Aug. 10, by M. Leverrier.—Observations of the Perseides, at the Observatory of Clermont-Ferrand, on Aug. 10 and 11, by M. Gruy.—*Résumé* of practical rules of the new navigation, by M. Fasci.—Influence of sonorous vibrations on the radiometer, by M. Jeannel (see note).—Action of hydracids on tellurous acid, by M. Ditte.—On rhodine from the analytic point of view, by M. Jacquemin. A drop of pure aniline, then of hypochlorite of soda, added to a certain volume of alcohol diluted with water, gives a yellowish colour, passing into green or persistent bluish green. This reaction should prove useful in testing for phenol.—Researches on the derivatives of acetylvalerianic ether, by M. Demarcay.—Examination of the minerals of Chili, by M. Domeyko.—Alterations of the urine in athrepsia of the newly-born; applications to diagnostic, prognostic, and pathogeny, by MM. Parrot and Robin.—Investigation of animal organic matter in ancient strata, by M. Husson. From his comparisons he concludes:—1. That bitumens with tarry odour are of essentially vegetable origin. 2. That those with fetid odour, recalling Dippel oil, are of animal origin. 3. That these are, in secondary and tertiary strata, the last remains of the animal substance which is found already profoundly altered in the diluvium, and which exists in great part in the state of osseine in the ground of our bone-caverns.—Experiments on mechanical reproduction of the flight of a bird, by M. Tatin. He obtained much better effects with his mechanical birds (worked by caoutchouc springs) by always placing the centre of gravity before the centre of suspension.—Stratified beds of massive silex observed near Digrin (Saône-et-Loire) in a formation considered as cretaceous, by M. Canat.

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ERRATUM.—Vol. xiv. p. 338, col. x, line 9 from bottom, for "Umbelliferæ" read "Umbellulariæ."